FOREIGN ANIMAL
DISEASES REPORT

DECEMBER 1973

EXOTIC NEWCASTLE DISEASE ACTIVITIES REPORT

During the period October 31, 1973, through November 26, 1973, the Exotic Newcastle Disease Emergency Organization established at Brentwood, Tennessee, (as mentioned in the October-November Foreign Animal Diseases Report) continued to coordinate surveillance, inspections, investigations, and other activities involving the possible exposed flocks under surveillance in Kentucky, Tennessee, and Georgia. Altogether 45 flocks in three States, three flocks in Georgia, five in Tennessee, and 37 in Kentucky, were originally under surveillance for exotic Newcastle disease. All premises where the flocks were located were placed under State quarantine. In addition, the hatchery at Somerset, Kentucky, three other premises in Kentucky, and two premises in Tennessee were placed under Federal quarantine. The surveillance program on these flocks will cover a period of 90 days from date of possible exposure and will include once-a-week inspections with tracheal or cloacal swabs taken three times during the first 30 days and monthly thereafter. Swabbings are conducted at the overall rate of 5 percent, or 10 percent in flocks of less than 1,000, with 500 swabs maximum from any one flock. An Epidemiological Necropsy Surveillance Program (ENSP) including the pickup of birds which die from any cause in these flocks is also being used, and producers have been asked to report any unnatural conditions which they may observe. Surveillance involving the Nashville, Tennessee, pet shop included tracing incoming shipments to the source, tracing all sales of birds, depopulating the exposed birds with indemnity payments to the owners, and cleaning and disinfecting the premises.

The last swabbing of flocks under surveillance was completed by November 30, 1973. The inspections, examinations, and laboratory results do not indicate any evidence of exotic Newcastle disease. As of November 26, 1973, 13 flocks remained under surveillance with three in Georgia, two in West Tennessee, and eight small flocks in Kentucky. The 90-day inspection period for all flocks under surveillance by the task force office in Brentwood, Tennessee, will be completed by December 21, 1973. It is anticipated that the Brentwood office will be closed at that time.

During the period November 1 through November 26, 1973, there were no positive cases of exotic Newcastle disease in southern California. Laboratory tests of dead birds submitted weekly under the ENS Program from commercial egg-laying flocks continues at a high rate with negative results.

At the beginning of November, the number of flocks on ENSP in Los Angeles County was reduced to 12. These 12 flocks are in the area where exotic Newcastle disease was previously experienced. During the period of November 1 to November 24, 1973, flocks in four southern California Counties were under ENSP surveillance. The flocks under surveillance in Los Angeles and Ventura Counties had 100 percent participation and those in San Bernardino and Riverside Counties had 96 and 94 percent coverage, respectively.

The surveillance of backyard flock populations as initially reported in the October-November issue of the Foreign Animal Diseases Report has been completed in six southern California Counties, including San Diego, Ventura, Orange, Los Angeles, San Bernardino, and Riverside.

In Los Angeles, Orange, San Diego, and Ventura Counties, where fewer diagnostic results had been accumulated, a special survey was conducted from September 17 through October 29, 1973. The number of flocks and birds sampled in these four Counties is as follows:

	Flocks	Birds
Los Angeles	244	2,040
Orange	55	601
San Diego	389	3,699
Ventura	83	619

In Riverside and San Bernardino Counties, a much heavier biased sampling had already been achieved as a result of diagnostic calls or local surveys in the vicinity of previously positive flocks. Therefore, a much more limited random sampling was conducted in these two Counties. The number of flocks and birds randomly sampled primarily from October 12 through October 29, 1973, is as follows:

	Flocks	Birds
Riverside	17	176
San Bernardino	72	836

Laboratory results on the samples collected showed all flocks to be negative on virus isolation attempts. The results of the serological survey revealed 27 flocks containing one or more birds having hemagglutination-inhibition (H.I.) titers of 1:640 or higher. The results are:

	Flocks with H.I. Titer 1:640 or higher	High Titer Distribution			
		1:640	1:1280	1:2560	1:5120
Los Angeles County	1	1	-	-	-
Orange County	4	2	-	1	1
Riverside County	0	-	-	-	-
San Bernardino County	5	4	1	-	-
San Diego County	16	9	4	1	2
Ventura County	3	1	1	1	-

Followup investigations were made by diagnosticians on 17 of these 29 flocks. Thirteen flocks were bled again. Birds were not individually identified, so the individuals selected for repeated bleeding were not necessarily the same ones originally bled. This is probably not an important factor in evaluating the titer picture. In most instances the titers were lower than 1:640 when the flocks were bled approximately 10 to 14 days later. Only two flocks revealed titers of 1:640 on retesting. In these two flocks the previous high titer was 1:2560 in one and 1:5120 in the other. Normal variation in conducting the H.I. tests is believed to account for most of the difference between first test and retest titers. Fifteen flocks had a history of previous vaccination. One flock had an unknown vaccination history, but it is believed that the birds were purchased from a commercial ranch. One flock had a history of no previous vaccination against Newcastle disease. Reinspection of these 17 flocks was negative for clinical evidence of viscerotropic velogenic Newcastle disease (VVND). None of the flocks with higher than expected titers had a history indicative of clinical VVND.

The sampling also included diagnostic calls. Records of the number of "sick calls" made from March 1 to Nov. 15, 1973, in the six Counties are indicated below:

Riverside	414*
San Bernardino	184
Los Angeles	86
San Diego	44
Ventura	14
Orange	31

In addition to the above described surveillance, a survey of 23 intermediate

(*414 "sick calls" includes those made in the Norco area).

sized flocks that were too small for surveillance under ENSP, but had some commercial contacts or possibly a trading activity. They ranged in flock size from 16 to 811 birds with an average of 241 birds per flock.** Attempted virus isolation was negative in all cases. The H.I. test results were all negative in 10 flocks. Positive H.I. titers ranged from 1:10 to 1:640 with only two flocks showing titers of 1:640. The inspections of these flocks revealed no evidence of VVND.
**Excludes approximately 3,000 game birds in one flock.

On December 4, 1973, a work conference on exotic Newcastle disease was held in Hyattsville, Maryland, to review the surveillance program in southern California.

Surveillance of birds which were possibly exposed at the facility at JFK Airport in New York has continued with no evidence of exotic Newcastle disease. (See the October-November Foreign Animal Diseases Report). Likewise, surveillance of birds remaining under quarantine at the USDA Animal Import Center at Clifton, New Jersey, as well as birds which had left this Center, has remained negative for exotic Newcastle disease.

Regulations and Quarantine Actions

On October 26, 1973, the Federal quarantine on the Nashville, Tennessee, pet store was released. On Nov. 2, 1973, the Federal quarantine on the hatchery at Somerset, Kentucky, and the last remaining quarantine in southern California was removed. On November 15, 1973, three premises in Kentucky were released from quarantine. On Nov. 23, 1973, the premises near Adams in Montgomery County, Tennessee, was removed from Federal quarantine. There are currently no premises under Federal quarantine for exotic Newcastle disease anywhere in the continental United States.

HOG CHOLERA ACTIVITIES

The hog cholera outbreak situation continues to look good. It has now been over 5 months since hog cholera was last diagnosed in the United States with the last outbreak occurring on June 28, 1973. No areas in the continental United States are under quarantine for hog cholera. The quarantine on the Commonwealth of Puerto Rico was released November 30, 1973.

The program phase status is unchanged from the last report. All 50 States and Puerto Rico are in Phase IV. All States with the exception of Indiana, New Jersey, North Carolina, Texas, and Puerto Rico are officially designated "hog cholera free".

Two committees with an interest in hog cholera met in October during the United States Animal Health Association's annual meeting at St. Louis, Mo. Both groups, the Advisory Committee on Hog Cholera Eradication, and the USAHA's Committee on the Nationwide Eradication of Hog Cholera, pointed out the economic gains the program has thus far produced, but at the same time, emphasized the necessity for maintaining and strengthening hog cholera surveillance activities. The watchword is still - REPORT SICK SWINE - SUSPECT CHOLERA FIRST!

ARTHROPOD VECTORS OF FOREIGN ANIMAL DISEASES

The first annual seminar on Arthropod Vectors of Foreign Animal Diseases was held at College Park, Md. on November 13-14, 1973. This seminar, sponsored by Emergency Programs, Veterinary Services, initiated an intra-departmental cooperative effort in which the Agricultural Research Service (ARS) designated Veterinary Entomology Cooperators to assist in foreign animal disease eradication programs.

The principal objective of the seminar was to provide the ARS Veterinary Entomology Cooperators with an overview of Emergency Programs organization, functions and procedures, and to outline the responsibilities of the Veterinary Entomology Cooperators. In addition, the seminar provided a forum for discussion of potential endemic vectors of foreign animal diseases, vector control procedures under emergency conditions, and research priorities and capabilities of the ARS.

Since over half of the foreign animal diseases of critical concern to Veterinary Services, Emergency Programs are transmitted either biologically or mechanically by arthropod vectors, current vector control principles and procedures must be applied in support of foreign animal disease eradication efforts. This seminar opened lines of communication between regulatory officials and technical as well as research expertise in veterinary entomology. Future seminars will consider in depth the role of arthropod vectors in the epizootiology of specific foreign animal diseases.

FOOT-AND-MOUTH DISEASE VIGILANCE IN MEXICO CONTINUES

Over 500 vials containing frozen Zebu bull semen from Brazil were impounded in Mexico in early November. The vials had been smuggled into Mexico.

The Secretary of Agriculture and Livestock, Manuel Bernardo Aguirre, has warned border stations and seaport and airport officials to continue their vigilance to prevent the introduction of FMD into Mexico. Livestock or their byproducts which come from infected countries pose the greatest threat of introduction of FMD.

NEW RESTRICTIONS ON MEXICAN CATTLE PROPOSED

New proposed regulations would prohibit cattle imported from Mexico that have been exposed to bovine piroplasmosis from entering areas of Texas currently under Federal quarantine for cattle fever ticks.

The proposal would not change existing regulations which allow exposed cattle to enter non-quarantined areas of Texas if they have been dipped and inspected.

Two areas of Texas are now under quarantine for cattle fever ticks: one surrounding a recent tick infestation and the second comprising the permanent buffer zone along the Rio Grande River.

Cattle tick fever is common among cattle from tick-infested areas of Mexico and since these cattle developed resistance to the disease when exposed as young animals in Mexico, they do not show symptoms though they may be carrying the disease agent. Thus, they must be kept away from cattle fever ticks, the only carriers of the fever, to prevent the exposure of U.S. cattle to the disease.

USDA RESTRICTS MEAT IMPORTS FROM BAHAMAS

In a continuing effort to protect U.S. animal health from foot-and-mouth disease, rinderpest and swine vesicular disease (SVD), meat import restrictions were imposed recently on the Bahama Islands. All meat entering the United States from the Bahamas must now be accompanied by proper certification indicating that the meat is from animals originating in the Bahamas and has not been in contact with meat from countries infected with these diseases.

The Bahamas are presently free of SVD, FMD and rinderpest, but the Islands import meat from infected countries. These meats in turn could be brought into the United States and cause a major disease outbreak. Restrictions similar to the Bahaman restrictions already apply to other nations free of these diseases that import meat from infected countries.

Tourists returning to the United States with purchases of meat present a major risk due to the possibility that the meat products may have originated in infected countries. Imports into the U.S. of fresh, chilled or frozen meat and most types of processed meat or meat products from FMD-infected countries are prohibited unless processed in a manner that has been determined to be adequate to destroy the virus.

PROGRESS NOTED IN PUERTO RICO SCREWWORM PROJECT

No screwworm cases on the island of Vieques, Puerto Rico, have been confirmed since June 28 and progress in eliminating this livestock pest from Puerto Rico looks better than at any time in recent months.

In the middle of 1972, a cooperative methods development field trial began in Puerto Rico and the Virgin Islands to search for better methods to eliminate screwworms in tropical environments. The techniques developed in this field trial will be applied to the Mexico-U.S. Screwworm Eradication Program currently beginning in Mexico.

The long screwworm-free period on Vieques is attributed to several changes in program operations. In April, the U.S. Air Force Reserve began airlifting screwworm pupae in pressurized, air-cooled aircraft. Cooling the pupae and flies during the 7-hour flight from the Texas producing plant to Puerto Rico helped insure a younger, fresher fly for field trial use. Chilling facilities were also installed at the distribution center in Puerto Rico to help prolong fly vigor.

Prior to July, 1972, the screwworm flies released over Vieques were a cross-breed of flies gathered in traps in the Southwest. A new "Puerto Rican strain" of flies, cross-bred only from Puerto Rico flies, was recently put into use. This new strain appears to be more agressive in competing for the native female fly's attention.

SWINE VESICULAR DISEASE - A REVIEW

Definition: Swine vesicular disease (SVD) is a highly contagious, viral infection of swine clinically indistinguishable from Foot-and-Mouth Disease (FMD), Vesicular Exanthema of Swine (VES) and Vesicular Stomatitis (VS). It is characterized by vesicular lesions and erosions of the epithelium of the mouth, snout, teats, tongue and feet. The virus responsible for this disease is a member of the enterovirus group of picornaviruses.

History: Swine vesicular disease was first described in Italy in 1966, where it was confused with FMD. A second outbreak was reported in Hong Kong in 1971 during an FMD vaccine trial. The most recent outbreaks occurred in November through December of 1972, and have been reported in France, Great Britain, Italy, Austria, and Poland. In September of 1973, SVD was also diagnosed in West Germany. As of November 7, 1973, Great Britain has recorded 113 outbreaks since the disease was first diagnosed on December 11, 1972. Several of these outbreaks were confirmed during the first week of November 1973. The SVD outbreaks in Great Britain have necessitated the slaughter of 61,000 pigs as of November 7, 1973.

Signs: The clinical signs and lesions of SVD are indistinguishable from those of FMD, VS, and VES. Lameness may be the first sign of the disease, which is then followed by the appearance of vesicles (blisters) several hours later. Lameness may not be as severe as the lameness seen in FMD. Diseased pigs may have a temperature of 104-106^{o}F or greater and food consumption may be reduced. Vesicular lesions have been reported on the coronary band (where the horn of the claw joins the skin), soles of the feet, interdigital spaces, teats, tongue, nose, and lips. Ulceration of the skin over the metacarpal and metatarsal regions is common. The vesicles rupture and in some cases the epithelial areas of the feet not originally vesicular will form raw ulcerous areas. Occasionally, the horn of the hoof may be shed from the affected foot.

Incubation Period: Susceptible animals in contact with SVD infected pigs may show signs of the disease in 2-7 days. Pigs fed contaminated feed developed symptoms of SVD in 2-3 days. The SVD virus is readily isolated from feces, blood, vesicular tissue, vesicular lesion fluid and oesophageal-pharyngeal samples of diseased pigs.

Occurrence: Separate serologically related virus isolations have been made in Italy, Hong Kong, Great Britain (England, Scotland and Wales), France, Poland, Austria, and West Germany. The disease has not been reported in the Western Hemisphere.

Transmission: The major means of dissemination of the virus appears to be direct contact with infected animals or contaminated materials. Aerosols, although produced by affected pigs, do not appear to be significant in spread from one farm to another. The following means of spread appear to be important:

Waste food (garbage) feeding
Market movement of slaughter and feeder pigs
Contaminated vehicles - two or more days after hauling infected pigs
Direct movements from infected premises
Inadequate cleaning and disinfection - reoccurrence of disease

The SVD virus is much more resistant to disinfectants and environmental conditions than FMD virus. SVD virus is acid stable and a pH range of less than 2.5 or more than 12.5 is needed for its inactivation. The virus is widely disseminated in essentially all tissues of the infected animal.

Hosts: The only known species susceptible to infection with SVD are swine, baby mice and man.

Diagnosis: Any vesicular disease of pigs is of major importance and anytime signs resembling the vesicular diseases are observed, State and Federal regulatory officials must be immediately notified. Specially trained diagnosticians will then examine the herd and collect specimens. Depending upon an evaluation of the suspected disease condition, specimens will be carried by courier to the ARS Plum Island Animal Disease Center in New York or to the Veterinary Services Diagnostic Laboratory in Ames, Iowa, for laboratory examination.

Control: No vaccines have been developed for SVD. The Food and Agriculture Organization (FAO) and Office of International Epizootics (OIE) have recommended the eradication by test and slaughter should the disease appear in a country.

Public Health Aspects: Swine vesicular disease virus is closely related to the human enterovirus, Coxsackie B-5. Human infection has been reported in laboratory workers and most human serums will show some neutralization of SVD virus.

WORLD DISEASE REPORTS*

Foot-and-Mouth Disease

Country	Date 1973	New Outbreaks	Country	Date 1973	New Outbreaks
Angola	June-July	2	Iraq	Aug. 1-15	24
Austria	Aug. 27-Oct. 7	1	Israel	Sept. 5-16	1
Cameroon	Jan.-March	4	Jordan	June-Aug.	2
Chad	May-July	1	Kenya	July-Aug.	7
Egypt	Aug.-Sept. 15	1	Lebanon	July-Aug.	15
Greece	June-July	76	Malawi	August	2
Hong Kong	July-August	6	Spain	June	5
India	May-July	58	Tanzania	June	6
Indonesia	July-Oct. 22	3	Uganda	Jan.-April	34
Iran	Aug.-Sept.	23			

Rinderpest

Chad	June-July	2	Niger	July	1
Ghana	April-June	1	Viet Nam	July	2
India	May	26**			

(**14 previously reported in May occurred in April 1973.)

Contagious Bovine Pleuropneumonia

Angola	June-July	9	Ghana	June	3
Cameroon	Jan.-March	7	India	April	6
Chad	July	1	Uganda	Jan.-April	2

Lumpy Skin Disease

South Africa reported 2 cases of the disease which occurred from June through August.

Sheep Pox

Egypt	Sept. 1-15	35	Jordan	April-Sept.	2
India	May	21	Kenya	July-Aug.	2
Iran	Aug.-Sept.	21	Lebanon	May-Aug.	7
Iraq	Aug. 1-15	13	Tunisia	April-Aug.	4
Israel	May-June	3			

African Horse Sickness

Lesotho	July-Aug.	1	South Africa	June-Aug.	3

Dourine

South Africa	June-Aug.	4	U.S.S.R.	May-July	10

African Swine Fever

Angola	June-July	2	South		
Portugal	Aug.-Sept.	59	Africa	August	1
Spain	July 16-Sept. 30	147			

Teschen Disease

Czechoslovakia reported 1 case of the disease which occurred in July and August.
(*Adapted from International Office of Epizootics Monthly Circulars Numbered 321 and 322).

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